

DESCRIPTION

The Halo RA56 LED Adjustable Gimbal series are retrofit LED Modules for 5" and 6" aperture recessed downlights. The RA56 gimbals feature adjustment of 35-degree tilt and up to 360-degree rotation. In addition the RA56 gimbals offer selection of narrow flood (NFL) and very wide flood (VWFL) models for beam distributions suitable for accent, task, grazing and general area lighting. The RA56 integral LED 120V driver is dimmable with most leading edge and trailing edge phase control dimmers.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

MECHANICAL

- Module includes LED, heat sink, reflector, lens optic, baffle reveal, and trim ring
- Trim ring is sized to conceal 5" and 6" housing openings, and features a visually appealing graduated step design
- Durable die-cast aluminum construction
- Integrated heat sink design conducts heat away from the LED keeping the junction temperatures below specified maximums, even when installed in insulated ceiling environments
- Halo matte white paint finish
- 35-degree tilt
- Up to 360-degree rotation

Optics

NARROW FLOOD - NFL

- Precision acrylic lens
- Optical design creates a clean, uniform 25-degree beam distribution

VERY WIDE FLOOD - VWFL

- Impact-resistant polycarbonate
- Convex form for lamp-like appearance
- Diffusing, wide beam for even illumination

MOUNTING

Torsion Spring Brackets

- Pre-installed precision formed torsion spring brackets secure torsion springs and adjust to fit 5" or 6" compatible housings

5" & 6" Friction Blade Kit

- Precision formed friction blades kit included (2 - 5" and 2 - 6")
- Provide alternative to torsion springs for retrofit in 5" and 6" housings without torsion spring mounting tabs.
- Friction blade design allows the RL560 to be installed in any position within the housing aperture (360 degrees).
- Replacement Kit: RL56CLIP

Housing Compatibility

See Housing Compatibility

LED

- Color Temperature (CCT) Options: 2700K, 3000K
- Color Rendering Index (CRI) 92
- LED is a chip on board design consisting of a multiple LED package with proximity phosphor coating to create one virtual white light source for a productive "cone of light"

ELECTRICAL

Power Connections

- LED connector is a non-screw base luminaire disconnect offering easy installation with the matching Halo 5" H550 Series and 6" H750 and H2750 Series LED housings.
- LED Connector meets high-efficacy luminaire requirements for a non-screw base socket, and where required to qualify as a high-efficacy luminaire. (California Title-24)
- The included E26 medium screw-base Edison adapter provides easy retrofit of incandescent housings (see Housing Compatibility).*

Ground Connection

- Separate grounding cable included on the module for attachment to the housing during installation.

LED Driver

- Dimmable driver is a 120 Volt, high efficiency, electronic power supply providing DC power to the LED.
- Driver meets FCC EMI/RFI Consumer Level limits for use in residential and commercial installations.
- Driver features high power factor, low THD, and has integral thermal protection in the event of over temperature or internal failure.
- Driver mounts externally to the module, allowing future replacement, if needed.

Dimming

- The Halo RA56 LED is designed for dimming capability to 10% in normal operation with standard 120V leading edge (LE) and trailing edge (TE) phase control dimmers.
- The LED module may also dim to 5% nominal using dimmers with low end trim adjustment. (Consult dimmer manufacturer for dimmer details. Note, some dimmers require a neutral in the wallbox.)

Warranty

Cooper Lighting Solutions provides a five year limited warranty on RA56 LED.

Compliance Labels

- UL/cUL Listed 1598 Luminaire (with listed Halo housings)
- UL Classified (with other housings - see Housing Compatibility)
- UL/cUL Listed for Damp Location
- May be installed in housings in direct contact with air permeable insulation** and combustible material
- IP ingress protection rating NFL models: IP35 VWFL models: IP54

Qualification

- ENERGY STAR® qualified residential and commercial*
- Can be used for State of California Title 24 high efficacy luminaire compliance*
- Can be used for Washington State Energy Code (WSEC) and International Energy Conservation Code (IECC) high efficacy luminaire Compliance

IC (Insulated Ceiling)

Listed UL/cUL 1598 with compatible housings, may be used to meet insulated ceiling** requirements such as:

- Washington State Energy Code (WSEC)
- International Energy Conservation Code (IECC)
- New York State Energy Conservation Construction Code (NY-ECCC)
- State of California Title 24 "Recessed Luminaires in Insulated Ceilings."



RA56 LED
Very Wide Flood
(VWFL)



RA56 LED
Narrow Flood
(NFL)

5-Inch / 6-Inch
Adjustable Gimbals
All-Purpose Recessed
Retrofit Modules

FOR USE IN INSULATED
CEILING AND
NON-INSULATED
CEILING RATED HOUSINGS

HIGH EFFICACY LED
WITH INTEGRAL DRIVER -
DIMMABLE



Refer to ENERGY STAR® Qualified Products List. Can be used to comply with California Title 24 High Efficacy requirements. Certified to California Appliance Efficiency Database under JA8. Indoor LED nominal CCT of 4000K or less.

*Non-California Product Only

*Qualified and compliant. Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.

** Not for use with housings in direct contact with spray foam insulation.

ENERGY DATA

Minimum Starting Temp: -30°C (-22°F)
EMI/RFI: FCC Title 47 CFR, Part 15, Class B (Consumer)
Sound Rating: Class A standards
Input Voltage: 120V
Power Factor: >0.90
Input Frequency: 50/60Hz
THD: <20%
Input Power: 10W
Input Current: 85mA

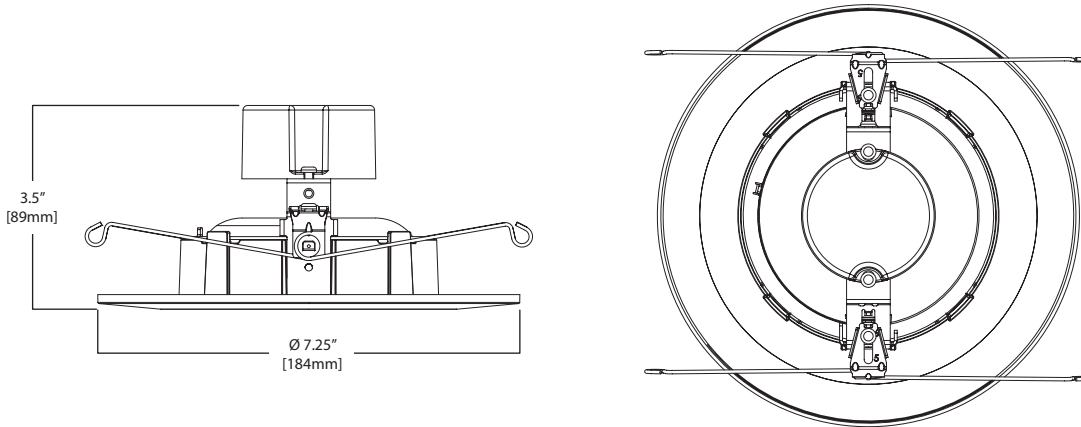
Driver-Safety Agency Approvals:

- UL60950-1 Recognized
- LPS output
- UL8750 Compliant

Maximum IC (Insulated Ceiling) Ambient Continuous Operating Temperature: 25°C (77°F)

Maximum Non-IC (NON-Insulated Ceiling) Ambient Continuous Operating Temperature 40°C (104°F)

DIMENSIONS



LIGHTING FACTS

RA5606927WH
2700K Source
VWFL Beam

lighting facts A Program of the U.S. DOE	
Light Output (Lumens)	645
Watts	10
Lumens per Watt (Efficacy)	64
Color Accuracy Color Rendering Index (CRI)	90
Light Color Correlated Color Temperature (CCT)	2700 (Warm White)
<small>All results are according to IESNA LM-79-2008. Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>	
<small>Visit www.lightingfacts.com for the Label Reference Guide.</small>	
<small>Registration Number: F4Q-JYV51T (10/25/2013) Model Number: RA5606927WH Type: Retrofit Kit - Downlight</small>	

RA5606930WH
3000K Source
VWFL Beam

lighting facts A Program of the U.S. DOE	
Light Output (Lumens)	670
Watts	10
Lumens per Watt (Efficacy)	67
Color Accuracy Color Rendering Index (CRI)	90
Light Color Correlated Color Temperature (CCT)	3000 (Bright White)
<small>All results are according to IESNA LM-79-2008. Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>	
<small>Visit www.lightingfacts.com for the Label Reference Guide.</small>	
<small>Registration Number: F4QJ-QQP22 (10/25/2013) Model Number: RA5606930WH Type: Retrofit Kit - Downlight</small>	

RA5606927NFLWH
2700K Source
NFL Beam

lighting facts A Program of the U.S. DOE	
Light Output (Lumens)	625
Watts	10
Lumens per Watt (Efficacy)	62
Color Accuracy Color Rendering Index (CRI)	90
Light Color Correlated Color Temperature (CCT)	2700 (Warm White)
<small>All results are according to IESNA LM-79-2008. Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>	
<small>Visit www.lightingfacts.com for the Label Reference Guide.</small>	
<small>Registration Number: F4QJ-EIRV88 (10/25/2013) Model Number: RA5606927NFLWH Type: Retrofit Kit - Downlight</small>	

RA5606930NFLWH
3000K Source
NFL Beam

lighting facts A Program of the U.S. DOE	
Light Output (Lumens)	640
Watts	10
Lumens per Watt (Efficacy)	64
Color Accuracy Color Rendering Index (CRI)	90
Light Color Correlated Color Temperature (CCT)	3000 (Bright White)
<small>All results are according to IESNA LM-79-2008. Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>	
<small>Visit www.lightingfacts.com for the Label Reference Guide.</small>	
<small>Registration Number: F4QJ-XQZYEQ (10/25/2013) Model Number: RA5606930NFLWH Type: Retrofit Kit - Downlight</small>	

For further information refer to the Lighting Facts website at <http://lightingfacts.com/>.

ORDERING INFORMATION

SAMPLE NUMBER: RA5606930WH
Complete unit includes RA56 LED and a 5" or 6" compatible housing, ordered separately (see: Housing Compatibility).

RA56 Series	Accessory (order separately)
<p>Very Wide Flood - VWFL Models</p> <p>RA5606927WH= 5"/6" LED Adjustable Gimbal, 90CRI, 2700K, White, Very Wide Flood</p> <p>RA5606930WH= 5"/6" LED Adjustable Gimbal, 90CRI, 3000K, White, Very Wide Flood</p> <p>Narrow Flood - NFL Models</p> <p>RA5606927NFLWH= 5"/6" LED Adjustable Gimbal, 90CRI, 2700K, White, Narrow Flood</p> <p>RA5606930NFLWH= 5"/6" LED Adjustable Gimbal, 90CRI, 3000K, White, Narrow Flood</p> <p>*California - E-26 Models</p> <p>RA5606927WH-CA</p> <p>RA5606930WH-CA</p> <p>RA5606927NFLWH-CA</p> <p>RA5606930NFLWH-CA</p>	<p>HE26LED=Replacement screw base adapter (one included with unit)</p> <p>RL56CLIP=Replacement 5"/6" Friction Blade Kit (one included with unit)</p> <p>OT400P=Oversize Flat White Metal trim ring 6" I.D. x 9-1/4" O.D. (ring slips behind RA56 ring, in stepped configuration)</p> <p>OT403P=Oversize White Plastic trim ring 6" I.D. x 8" O.D. (ring slips behind RA56 ring, in stepped configuration)</p> <p>TRM690WH=Oversize Matte White Metal trim ring. Designed for RA56 ring to inset into oversize ring for an even (non-stepped) trim surface</p>

Housing Compatibility

Compatible Halo LED Housings with LED luminaire connector (high-efficacy compliant)		
HALO LED	Recessed Can Size	Catalog Number
	5"	H550ICAT, H550RICAT, E550ICAT, E550RICAT
	6"	H750ICAT, H750RICAT, H750T, H750RINTD010, H750TCP, H2750ICAT, H2750RICAT, E750ICAT, E750RICAT
Halo LED Retrofit Enclosures		
HALO	6"	ML7BXRFK, ML7E26RFK
Compatible Halo Incandescent E26 Screwbase Housings		
HALO	5"	H5ICAT, H5RICAT, H5ICATNB, H5T, H5RT, H25ICAT, H25ICATNB, E5TAT, E5RTAT, H5TNB, E5TATNB, E5ICAT, E5RICAT, E5ICATNB
	6"	H7ICAT, H7RICAT, H7ICT, H7RICT, H7ICATNB, H7ICTNB, H7T, H7RT, H7TNB, H7TCP, H7UICT, H7UICAT, H27ICAT, H27RICAT, H27T, H27RT, E7ICAT, E7RICAT, E27ICAT, E27RICAT, E7ICATNB, E7TAT, E7RTAT, E7TATNB, E27TAT, E27RTAT

HOUSINGS - UL Classified

For retrofit in the following 5" and 6" recessed housings:

Juno®	IC22, IC22R, IC22W, IC22S, IC23, IC23W, IC21, IC21R, IC2, TC2, TC2R, IC20, IC20R, IC25, IC25R, IC25W, IC25S, TC20, TC20R
Capri Lighting	CR1, PR1, QL1, R9ASIC, R5*
Lightolier®	1104ICS*, 1104ICR*, 1104SIC*, 1104SICR*, 1004ICS*, 1004ICR*, 1004SIC*, 1004SICR*
	1104ICX - Requires installation of ML7RAB retrofit adapter band accessory (not included).
Progress® Lighting	P87-AT*, P86TG
Lithonia Lighting®	L7X, L7XP
Thomas® Lighting	PS1, R9ASIC/PS9RM
Prescolite®	IBXS
Commercial Electric™	C7ICA (H3), H18
Elco Lighting®	(HL7ICA) EL7ICA

*Requires replacement of torsion springs with included friction clips (accessory replacement kit: RL56CLIP).

Juno®, Capri Lighting, Lightolier®, Lithonia Lighting®, Thomas® Lighting, Elco Lighting®, Progress® Lighting, Prescolite® and Commercial Electric™ and their product brand names, where identified above, are tradenames or trademarks of each respective company and Cooper Lighting Solutions makes no representations on these trademarks.

PHOTOMETRY

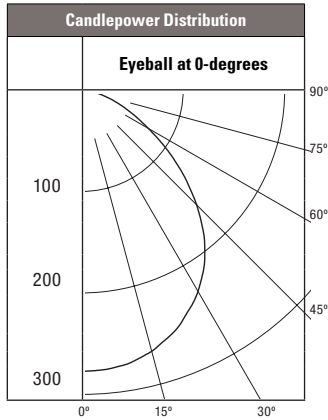
RA5606927WH

Reflector Beam Angle = VWFL Beam
(Very Wide Flood)

CCT = 2700K
Spacing Criteria = 1.23
Lumens per Watt = 64.5 Lm/W
Test No. P121913
Test Model: RA5606927WH

Cone of Light Footcandles 0 deg Aiming Angle Horizontal Illuminance on Floor			
Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	9.2	6.6	6.6
7'	5.7	8.4	8.4
8'	4.3	9.8	9.8
9'	3.4	11	11
10'	2.8	12.2	12.2

Cone of Light Footcandles 35 deg Aiming Angle Vertical Illuminance on Wall				
Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)		CB
		L Length	W Width	
2'	43.7	2.1	2.4	2.9
3'	19.4	3.1	3.8	4.3
4'	10.9	4.1	5	5.7
5'	7	5.2	6.2	7.1
6'	4.9	6.4	7.6	8.6
8'	2.7	8.4	10.2	11.4
10'	1.7	10.7	12.6	14.3



Degrees Vertical	Candela
0*	277
5	276
15	267
25	244
35	211
45	160
55	103
65	55
75	23
85	4
90	0

Luminance (Average Candela/M ²)	
Degree	Avg. 0° Luminance
45	31342
55	24818
65	17873
75	12507
85	6032

Zonal Lumen Summary		
Zone	Lumens	% Fixture
0-30	214	33.2
0-40	345	53.5
0-60	560	86.9
0-90	645	100

*CBCP

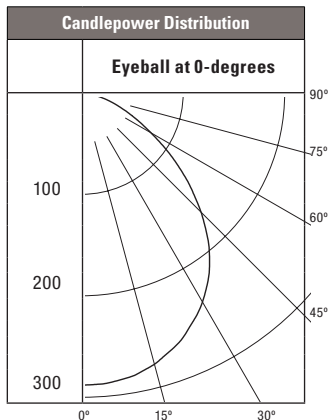
RA5606930WH

Reflector Beam Angle = VWFL Beam
(Very Wide Flood)

CCT = 3000K
Spacing Criteria = 1.23
Lumens per Watt = 67 Lm/W
Test No. P121915
Test Model: RA5606930WH

Cone of Light Footcandles 0 deg Aiming Angle Horizontal Illuminance on Floor			
Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	9.5	6.6	6.6
7'	5.9	8.4	8.4
8'	4.5	9.8	9.8
9'	3.6	11	11
10'	2.9	12.2	12.2

Cone of Light Footcandles 35 deg Aiming Angle Vertical Illuminance on Wall				
Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)		CB
		L Length	W Width	
2'	45.4	2.1	2.4	2.9
3'	20.2	3.1	3.8	4.3
4'	11.3	4.1	5	5.7
5'	7.3	5.2	6.2	7.1
6'	5	6.4	7.6	8.6
8'	2.8	8.4	10.2	11.4
10'	1.8	10.7	12.6	14.3



Degrees Vertical	Candela
0*	288
5	287
15	277
25	253
35	219
45	166
55	107
65	57
75	24
85	4
90	0

Luminance (Average Candela/M ²)	
Degree	Avg. 0° Luminance
45	32555
55	25783
65	18560
75	12988
85	6349

Zonal Lumen Summary		
Zone	Lumens	% Fixture
0-30	222	33.2
0-40	358	53.5
0-60	582	86.9
0-90	670	100

*CBCP

PHOTOMETRY

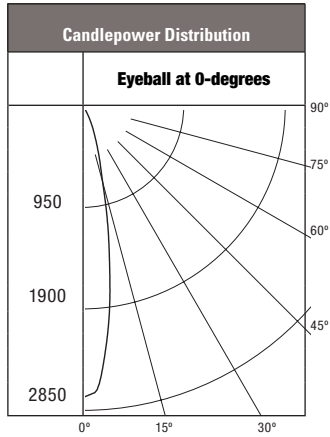
RA5606927NFLWH
 Reflector Beam Angle =NFL Beam (Narrow Flood)
 CCT = 2700K
 Spacing Criteria = 0.36
 Lumens per Watt = 62.5 Lm/W
 Test No. P121911
 Test Model: RA5606927NFLWH

Cone of Light Footcandles
 0 deg Aiming Angle
 Horizontal Illuminance on Floor

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	90.3	1.8	1.8
7'	55.8	2.4	2.4
8'	42.7	2.8	2.8
9'	33.7	3.2	3.2
10'	27.3	3.6	3.6

Cone of Light Footcandles
 35 deg Aiming Angle
 Vertical Illuminance on Wall

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)		
		L Length	W Width	CB
2'	157.4	1.7	1	2.9
3'	70	2.6	1.6	4.3
4'	39.4	3.5	2.2	5.7
5'	25.2	4.4	2.8	7.1
6'	17.5	5.3	3.4	8.6
8'	9.8	7	4.4	11.4
10'	6.3	8.8	5.6	14.3



Candela Distribution

Degrees Vertical	Candela
0*	2732
5	2371
15	740
25	239
35	69
45	27
55	16
65	9
75	3
85	0
90	0

Luminance
 (Average Candela/M²)

Degree	Avg. 0° Luminance
45	4649
55	2981
65	1846
75	828
85	97

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	530	84.7
0-40	576	92.1
0-60	612	97.9
0-90	625	100

*CBCP

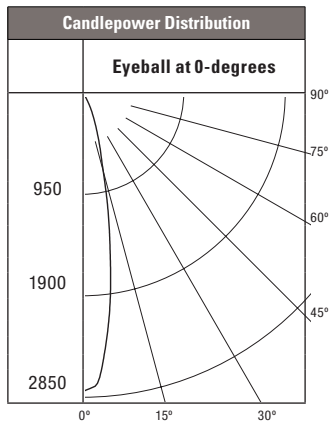
RA5606930NFLWH
 Reflector Beam Angle =NFL Beam (Narrow Flood)
 CCT = 3000K
 Spacing Criteria = 0.36
 Lumens per Watt = 64 Lm/W
 Test No. P121912
 Test Model: RA5606930NFLWH

Cone of Light Footcandles
 0 deg Aiming Angle
 Horizontal Illuminance on Floor

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	92.5	1.8	1.8
7'	57.1	2.4	2.4
8'	43.7	2.8	2.8
9'	34.5	3.2	3.2
10'	28	3.6	3.6

Cone of Light Footcandles
 35 deg Aiming Angle
 Vertical Illuminance on Wall

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)		
		L Length	W Width	CB
2'	161.2	1.7	1	2.9
3'	71.6	2.6	1.6	4.3
4'	40.3	3.5	2.2	5.7
5'	25.8	4.4	2.8	7.1
6'	17.9	5.3	3.4	8.6
8'	10.1	7	4.4	11.4
10'	6.4	8.8	5.6	14.3



Candela Distribution

Degrees Vertical	Candela
0*	2798
5	2428
15	758
25	245
35	70
45	28
55	17
65	9
75	3
85	0
90	0

Luminance
 (Average Candela/M²)

Degree	Avg. 0° Luminance
45	4751
55	3055
65	1909
75	853
85	97

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	542	84.7
0-40	590	92.1
0-60	627	97.9
0-90	640	100

*CBCP